

Remarks

A. Pending Claims

Claims 1, 3-12, 15, 17, 20, 45-46, and 48-50 are pending in the case. Claims 1, 3-5, 7-12, 15, 17, 20, 45-46, and 48-49 have been rejected. Claims 2, 6, 16, and 47 have been objected to. Claims 2, 16, and 47 have been cancelled. Claims 1, 15, 45 and 48 have been currently amended. Claim 50 has been added.

B. The Claims Are Not Anticipated By Petropoulos Pursuant To 35 U.S.C. § 102(e)

Claims 1, 3, 5, 7-12, 15, 20, 45-46, and 48-49 were rejected pursuant to 35 U.S.C. §102 (e) as being anticipated by U.S. Patent No. 6,788,057 to Petropoulos, et al. (herein after "Petropoulos"). Applicant respectfully disagrees.

The standard for "anticipation" is one of fairly strict identity. To anticipate a claim of a patent, a single prior source must contain all the claimed essential elements. *Hybritech, Inc. v. Monoclonal Antibodies, Inc.*, 802 F.2d 1367, 231 U.S.P.Q.81, 91 (Fed. Cir. 1986); *In re Donahue*, 766 F.2d 531, 226 U.S.P.Q. 619, 621 (Fed. Cir. 1985).

The Office Action states:

Petropoulos, ... discloses both a coil and the method of designing the coil comprising selecting an open geometry for the coil; selecting a region of interest for a field produced by the coil; defining a current density distribution for the coil; and numerically optimizing the current density distribution to produce a field of selected characteristics in the region of interest, specifically by numerically optimizing amplitudes (Lagrange multipliers) of a plurality of sinusoidal functions and employing a stream function technique (col. 6, line 56). With regards to wherein the coil is configurable for use in transcranial magnetic stimulation, it has been held that the recitation than an element is capable of, i.e., configurable for performing a function is not a positive limitation

but only requires the ability to so perform. It does not constitute a limitation in any patentable sense. In re Hutchinson, 69 USPQ 138.

Applicant respectfully submits that the cited art does not appear to teach or suggest the combination of features in claims 1, 3, 5, 7-12, 15, 20, 45-46, and 48-49.

Amended claim 1 describes a combination of features including, but not limited to, the feature of: “defining a stream function for the current density distribution of the coil, wherein the stream function is a sum of sinusoidal functions, wherein each sinusoidal function comprises an amplitude, and wherein the stream function is defined as follows:

$$S(x, y) = \sum_i A_i \sin\left(\frac{i \cdot \pi x}{a}\right) \cdot \sum_j B_j \sin\left(\frac{j \cdot \pi y}{b}\right) / (i \cdot j)$$

where A_i and B_j are Fourier coefficients representing the amplitudes of the sinusoidal functions in the x and y directions, respectively, and a and b are dimensions of the coil in the x and y directions, respectively.” Amended claim 15 describes a combination of features including, but not limited to, the feature of: “selecting an open geometry for the coil, wherein the selected geometry comprises a substantially half cylindrical shell.” Amended claim 45 describes a combination of features including, but not limited to, the feature of: “wherein a sum of the plurality of sinusoidal functions comprises a stream function for the current density distribution of the coil, wherein the stream function is defined as follows:

$$S(x, y) = \sum_i A_i \sin\left(\frac{i \cdot \pi x}{a}\right) \cdot \sum_j B_j \sin\left(\frac{j \cdot \pi y}{b}\right) / (i \cdot j)$$

where A_i and B_j are Fourier coefficients representing the amplitudes of the sinusoidal functions in the x and y directions, respectively, and a and b are dimensions of the coil in the x and y directions, respectively.” New claim 50 describes a combination of features including, but not limited to, the feature of: “a coil comprising a half cylindrical shell geometry and configured to produce a magnetic field of selected characteristics in a region of interest.”

Petropoulos does not appear to teach or suggest at least the cited features of independent claims 1, 15, 45, and 50. Applicant submits, that many of the claims

dependent on claims 1, 15, and 45 are separately patentable. Applicant requests removal of the anticipation rejection of claims 1, 3, 5, 7-12, 15, 20, 45-46, and 48-49.

C. The Claims Are Not Obvious Over Petropoulos Pursuant To 35 U.S.C. § 103(a)

Claims 4 and 17 were rejected pursuant to 35 U.S.C. §103 (a) as being obvious over Petropoulos. Applicant respectfully disagrees.

In order to reject a claim as obvious, the Examiner has the burden of establishing a *prima facie* case of obviousness. *In re Warner et al.*, 379 F.2d 1011, 154 U.S.P.Q. 173, 177-178 (C.C.P.A. 1967). To establish a *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974), MPEP § 2143.03.

The Office Action states:

Petropoulos did not disclose wherein numerically optimizing the current density comprises simulated annealing. It would have been obvious to one having ordinary skill in the art at the time the invention was made to employ a simulated annealing technique since the examiner takes Official Notice of the equivalence of simulated annealing and Lagrange optimization for their use in the art and the selection of any of these known numerical optimization techniques would be within the level of ordinary skill in the art.

Applicant respectfully submits that the cited art does not appear to teach or suggest the combination of features in claims 4 and 17.

Claim 4 includes, but is not limited to, the feature of: “wherein numerically optimizing the current density comprises simulated annealing.” The features of claim 4, in combination with the features of independent claim 1, do not appear to be taught or suggested by the prior art.

Claim 17 includes, but is not limited to, the feature of: “wherein numerically optimizing the current density comprises simulated annealing.” The features of claim 17, in combination with the features of independent claim 15, do not appear to be taught or suggested by the prior art.

Applicant requests removal of the anticipation rejection of claims 4 and 17.

D. Allowable Subject Matter

The Office Action states that claims 2, 6, 16, and 47 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

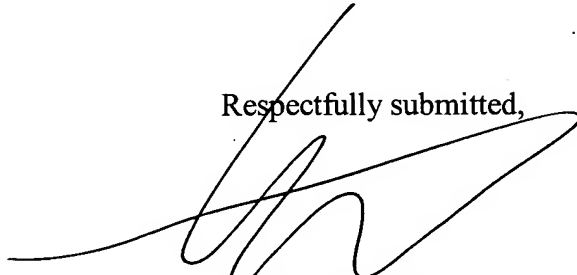
Amended independent claim 1 includes features from objected to dependent claim 2. Amended independent claim 15 includes features from objected to dependent claim 16. Amended independent claim 45 includes features from objected to dependent claim 47. New claim 50 includes features from objected to claim 6. As such, Applicant submits that amended independent claims 1, 15, 45, and 50 and the claims dependent thereon, are in condition for allowance.

E. **Conclusion**

Applicant submits that the claims are in condition for allowance. Favorable reconsideration is respectfully requested.

Applicant believes no fees are due in association with the filing of this document. If any extension of time is required, Applicant hereby requests the appropriate extension of time. If any fees are required, please appropriately charge, those fees to Meyertons, Hood, Kivlin, Kowert & Goetzel, P.C. Deposit Account Number 50-1505/5660-01901/EBM.

Respectfully submitted,



Eric B. Meyertons
Reg. No. 34,876

Attorney for Applicant

MEYERTONS, HOOD, KIVLIN, KOWERT & GOETZEL, P.C.
P.O. BOX 398
AUSTIN, TX 78767-0398
(512) 853-8800 (voice)
(512) 853-8801 (facsimile)

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